

SUPPLIER QUALITY ASSURANCE REQUIREMENTS

Quality requirements specified in this document are part of the terms and conditions Of the Purchase Order for which they are referenced. Failure to comply may result in Withholding acceptance of shipment or delay in payment of invoice.



GENERAL QUALITY CODES

The requirements of this section apply to all purchase orders

A. CONTROL OF QUALITY

The supplier is required to provide and maintain an Inspection and Quality Control System to commensurate with the complexity and reliability of the product to be supplied, and with the quality requirements of the Purchase Order. The system employed shall be subject to verification by AVOX Systems Inc.

Note: It is AVOX's preference to engage in business with suppliers that are AS9100 certified.

B. MEASUREMENT SYSTEM TRACEABLE TO NATIONAL STANDARDS

The supplier shall control devices used for inspection and measurement and they shall be calibrated traceable to a national standard.

C. RECORD RETENTION

The supplier shall maintain on file at the supplier's facility, quality records traceable to the conformance of product delivered to AVOX Systems Inc. The supplier shall make such records available to regulatory authorities and AVOX Systems Inc. representatives. The supplier shall retain such records for a period of not less than 10 years from the date of shipment. At the expiration of the 10 years contact AVOX Systems Inc. for disposition.

D. SUB-TIER SUPPLIER FLOW DOWN

The supplier is required to flow down all AVOX Systems Inc. purchase order requirements to sub-tier suppliers including design data and any special instructions.

E. FIRST-ARTICLE INSPECTION (FAI)

The Supplier shall submit a First Article Inspection (FAI) when any of the following occur:

- The first time material is provided (full FAI)
- A change in design (partial FAI for affected features/characteristics)
- A change in manufacturing source(s), process(es), inspection method(s), location of manufacture, tooling, materials, NC programming, natural or man-made event (full FAI).
- The first time material is provided in over 2 years (full FAI)
First Article material shall be produced using production tooling, processing and methods and must include all design data specified by the PO, Engineering drawing and any other applicable design document. A material certificate and special process certificate where applicable must be provided with the FAI report.
- **The FAI report will be retained by the supplier**, a copy of the FAI report must be provided to AVOX Systems Inc. with the material it represents. All characteristics must be compliant with the design data unless previous approval has been given by AVOX Systems Inc. The format of the FAI report must comply with SAE AS9102 or equivalent.

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F. CERTIFICATION OF CONFORMANCE

Each shipment shall be accompanied by a signed and dated certification which will include the AVOX Systems Inc. Purchase Order number, AVOX Systems Inc. part number and current revision, serial number(s), lot/batch or heat number(s), the quantity from each lot, supplier's P/N and shelf life/expiration date. C of C form shall indicate a positive statement of product conformance.

NOTE: SPECIAL PROCESS CERTIFICATION

When applicable, in addition to the above, each shipment shall be accompanied by a signed certification, from the processor, indicating the special process that was performed and the specifications/standards that it was performed and compliant. Inspection and test reports are to be maintained on file and available for review. Special processes include but are not limited to heat treating, welding, brazing, plating, and non-destructive testing processes such as x-ray, liquid penetrant, magnetic particle, ultrasonic, and visual inspection.

G. SUPPLIER CONTROLLED PRODUCT/PROCESS CHANGES

Notify AVOX Systems Inc. Purchasing Department prior to incorporating any change or substitutions for product ordered. Changes to tools, fixtures, molds, dies or other process controls, which may affect fit, form, or function must have written AVOX Systems Inc. approval.

Where Source Control is a requirement, objective evidence of the source of manufacture/process must be provided, i.e. manufacturer certification.

H. SAMPLING INSPECTION

Sampling Inspection may be employed with a statistically valid (C=0) sampling plan that precludes the acceptance of lots whose samples have known nonconformities. The use of other sampling plans or schemes is prohibited unless approved by AVOX Systems Inc.

I. WORKMANSHIP QUALITY

See [S_0006W_EN_Workmanship_Standards_Guideline](#).

J. SURFACE TEXTURE

See [S_0006W_EN_Workmanship_Standards_Guideline](#), para. 5.2

K. NON-CONFORMING PRODUCTS

Shipment of product which knowingly fails to conform to AVOX Systems Inc. drawings and specifications is prohibited without written approval from AVOX Systems Inc. via formal submission of Supplier Waiver/Deviation.

Notification to AVOX is required in the event of a product or component delivered to AVOX is later found to be nonconforming. Details of the nonconformance including delivery and quantities are required.

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L. AVOX SYSTEMS INC. GOVERNMENT / CUSTOMER OWNED TOOLING AND FIXTURING

Where AVOX Systems Inc., AVOX Systems Inc. customer or Government owned tooling and fixturing are used during the performance of this Purchase Order, the tooling and fixturing shall be maintained and stored in such a manner as to prevent damage and deterioration. Annual tool inspection is to be performed with records of results maintained by the Supplier. Notify AVOX Systems Inc., Buyer, should tooling require repair, rework or replacement.

M. AVOX SYSTEMS INC. LOANED INSPECTION EQUIPMENT

When standard gauging or other equipment is provided by AVOX Systems Inc. for use by the supplier during the performance of this Purchase Order, the equipment is to be maintained and used in a manner to prevent damage and deterioration. A calibration frequency is provided for loaned equipment, in the event this equipment remains at the supplier's facility beyond its scheduled calibration date, the Supplier is responsible to provide for such calibration by an AVOX Systems Inc. approved source or return the equipment to AVOX Systems Inc. for calibration. Exceptions will be approved by an AVOX Systems Inc. Quality Representative. The supplier is responsible for any repairs/replacement of loaned inspection equipment that is lost or damaged while in their possession.

N. CONTAMINATION CONTROL

Components and/or assemblies being supplied have LIFE-SUPPORT BREATHING APPLICATION. Product shall be cleaned to eliminate all contamination such as: tarnish, rust, corrosion, paints, preservative and organic materials such as grease, oil, ink and dye. The use of organic based corrosion/tarnish inhibitors or sealers is prohibited. Hanging burrs, scale, imbedded or attached particulate and loose materials such as chips and flakes must be removed. Packaging used shall maintain cleanliness during shipment and storage.

O. MERCURY EXCLUSION CLAUSE

Mercury Contamination – (i.e., during the manufacturing process, test or inspections). Supplies offered shall not come in direct contact with mercury or any of its compounds nor with any mercury containing devices employing a single boundary of containment (A single boundary of containment, is one which is not backed by a second seal or barrier to prevent contamination in event of rupture of the primary seal or barrier). Mercury contamination of the supplies will be cause for rejection of the supplies.

P. OXYGEN COMPATIBLE ELASTOMERS & LUBRICANTS

Assemblies offered containing elastomers and/or lubricants must be considered compatible with oxygen. A listing of all elastomeric compounds and/or lubricants contained in the products offered is to accompany each shipment of product.

Q. PACKAGING

See [S_0006W_EN Workmanship Standards Guideline](#), Para. 9.0

R. TEST REPORTS RAW MATERIAL/CHEMICAL/PHYSICAL

Each shipment shall be accompanied by a copy of the original test report containing quantitative data for the chemical analysis and/or physical properties, as applicable, for the material supplied or used in the manufacture of the product. (i.e. forging, casting, plate, bar, chemical).

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S. SHELF LIFE CERTIFICATION (where applicable)

At the point of delivery, products shall have at least 75% of the usable shelf life remaining, as defined by the manufacturer. Each shipment shall be accompanied by a signed and dated certification listing shelf life, cure and/or manufacture date and expiration date. Cure and /or manufacturing date shall also be physically marked on product or packaging. Marking of expiration date is the preferred method.

NOTE: for elastomers reference SAE ARP 5316

NOTE: for cylinders reference [U 0204AW SA](#)

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VARIABLE QUALITY CODES

These additional requirements apply only when called out on the purchase order by specific code number.

103 CALIBRATION SERVICE REQUIREMENTS

The supplier shall maintain a calibration system compliant with the requirements of ISO 17025 / ANSI/NCSL Z540-1.

105 QUALITY MANAGEMENT SYSTEM

The supplier shall maintain a Quality Management System certified with the applicable requirements of AS9100.

304 FUNCTIONAL TEST REPORT

Each shipment shall be accompanied by a copy of the actual Functional Test Report, which reflects the quantitative data on which product acceptance was based. Reports shall be identified to the product by serial number (each unit supplied), batch/lot number or other traceable means.

400 AVOX SYSTEMS INC. SOURCE INSPECTION

The supplier shall notify AVOX Systems Inc. Procurement at least (72) hours prior to the start of final inspection and/or acceptance test to facilitate witnessing by an AVOX Systems Inc. representative(s). The supplier shall not proceed without AVOX Systems authorization.

401 GOVERNMENT SOURCE INSPECTION

Government Source Inspection is required prior to shipment. Upon receipt of this order, promptly notify the Government Representative who normally services your facility so that appropriate planning for inspection can be accomplished.

404 AIRWORTHINESS DIRECT SHIPMENT AUTHORIZATION

An 8130-3/EASA FORM 1 or equivalent tag is required when direct shipment authorization has been granted by AVOX Systems.

704 KEY CHARACTERISTICS

Variation management activities must be performed on key characteristics until they are in control and capability is established. Appropriate monitoring methodology should then be implemented to ensure continued performance. A "Control Plan" is required.

If SPC is chosen as the method of control, the process shall be capable with a $CPK \geq 1.33$ or as specified by the customer. Other variation control methods may be used however measureable evidence must demonstrate that the controls are effective.

800 VERIFICATION TEST SPECIMENS

Specimens of materials or products shall be furnished to AVOX Systems Inc. for verification testing. Specimens shall be of the type, configuration, and quantity required by AVOX Systems Inc. drawings, specifications and test standards.

904 OXYGEN CLEAN PRODUCTS

Components and/or assemblies being supplied have HIGH PRESSURE LIFE-SUPPORT BREATHING APPLICATION. Product shall be oxygen cleaned in accordance with drawing or specification requirements. Each shipment shall be accompanied by a signed certification or statement on the Certificate of Conformance that parts were cleaned in accordance with specification standards. All parts shall be packaged to maintain oxygen cleanliness and packaging shall be labeled to identify the parts as oxygen clean.

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1300 LOT CONTROL

Component parts or subassemblies identified with a Code 1300 have been determined to be "Critical to Quality".

BATCH/LOT IDENTIFICATION

The batch/lot identification will include traceability to; the original mill date, lot #, heat #, mixing date, or any other suitable means of tracing the raw material and process back to its original manufacture, where (location), when (date), who (operator), how (process parameters).

RAW MATERIAL

The supplier shall maintain full traceability of all raw material(s) used in the manufacturing of components delivered to AVOX. The supplier shall flow down traceability requirements to their sub-contractors of raw materials used in the manufacturing of the component part or sub-assembly and shall be traceable to the original lot of raw material(s) from the original manufacturer.

MATERIAL LOT CHANGES

The supplier must be able to identify and segregate components manufactured from different lots of raw material(s). In cases where there were two different lots of materials used to produce the delivered component part or sub-assembly, or a process change(s) occurred, the manufacturing lot(s) shall be kept separate and identified with a unique Batch/Lot/Manufacturing Identification Number.

PROCESS LOT CHANGES

In cases where there were two different lots of materials used to produce the delivered component part or sub-assembly, or a process change(s) occurred, the manufacturing lot(s) shall be kept separate and identified with a unique Batch/Lot/Manufacturing Identification Number.

Material(s) supplied by AVOX which are used in the delivered component are traceable through AVOX's "Material Acceptance Tag" which provides visibility to the "Transaction/Batch Lot Control Number."

CHANGE AUTHORITY

Changes in Batch/Lot requiring AVOX Systems Inc. approval

- Any changes, including but not limited to; method, material, measurement, manpower, environment, and any other source of variation affecting product quality.
- Source of raw material

PROCESS/MATERIAL CHANGES

Permissible changes without notification to AVOX Systems Inc.:

- Shift/ Operator (from list of qualified approved operators)
- Raw material lot changes,

Note: the above changes require new batch/lot identification.

DELIVERABLE

Raw material batch lot control number(s) and supplier internal manufacturing work order number shall be listed on the supplier Certification of Conformance.